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ABSTRACT

The paper describes the system of conductive education for use with cerebral palsy and multihandicapped children which is based on the research of A. Peto. Conductive education is explained to involve such techniques as individualization of program and instruction, task analysis, transdisciplinary team organization, generalization of all learning, integration of language with perceptual-motor training, and a structured learning environment. (SBH)

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THE ROLE OF CONDUCTIVE EDUCATION IN THE MANAGEMENT OF THE INDIVIDUAL WITH CEREBRAL PALSY

Presented at the CEC First World Congress on Future Special Education

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Conductive Education or Pëto as we label it for convenience is a system of education for use with cerebral palsy and multiplyhandicapped children. The creator of Conductive Education, Professor Andras Pëto a Hungarian neurologist spent twenty years developing an integrated approach to the management of children with severe neurological disorders. Conductive Education is appealing because it embraces much of contemporary American pedagogy: Individualization of program and instruction, the latter offered within a group; task analysis as a means of determining the smallest increments necessary for achievement of a goal; transdisciplinary team organization of the staff; generalization of all learning--social, motor, academic--to other situations, events people; integration of receptive and expressive language with perceptual-motor training and within meaningful experiences. The learning environment is structured: rules are simple and consistent; routine is emphasized and reinforcement for productive performances is an integral part of the structure.

The Institute for the Motor Disabled in Budapest, Hungary has continued to research Professor Pëto's theories and programs since his death. The name "Conductive" emerged from the particular role assumed by the teacher or "Conductor." This individual handles the needs of the child unlike many treatment programs in the United States and the Continent where historically the child was parcelled out--the legs to the physical therapist, the arms to the occupational therapist and the brain to the teacher. Under such an organization it would be quite natural for each specialist to perceive the child from the viewpoint of his or her own

professional training. Furthermore, the child's treatment was considered to be so highly specialized that it was carried out in a clinical situation in a one-to-one relationship. There was rarely a single overall plan for the child's development. In Conductive Education the conductor serves the social, physical and academic needs of each child. The other professionals work in concert with the conductor in the classroom, but the conductor is responsible for formulating the individualized program and "orchestrating" the group. In spite of the important role of the conductor, the children are not "bound to one person but to the conductor system," according to Dr. Maria Hari, Professor Péto's successor at the Institute in Budapest.

All physical activity offered in Conductive Education is thoroughly practical; there are no exercises in the traditional sense. The child's functional level and needs are analyzed by the team--physical therapist, conductor, psychologist, aides and houseparents when the child lives in residence. The structured but highly interesting choices of motor and academic experiences motivate children to attempt and succeed in them. Demonstration of group support for an individual's achievement is common. Additional equipment for a Péto oriented classroom is minimal--a wood slatted cot called a plinth, a wood box, a baton, a ladder back wood chair.

Professor Péto was influenced by two well known Soviet neuropsychologists, Luria and Vygotsky. Recognizing that cerebral palsy children have a high percentage of speech, language and visual-perceptual problems, Péto hypothesized that before the language of space and time is acquired there must be adequate spatial-temporal experience. In other words, the perceptual-motor structure of space influences the acquisition of the

language of space and time, and reciprocally a speaker's language helps to determine how well he organizes himself in space and time. Professor Péto incorporated this hypothesis into a procedure he called "Rhythmical Intention." In this procedure all students are provided a multitute of practical experiences that permit them to gain an accurate awareness of themselves as they function in time and through space. Simultaneously the conductor provides the language counterparts for each experience. Next the children chant what they are going to do, and following this chant of the direction they count or chant a temporal rhythm while they execute the movement. For example take the following task, "I stretch out my elbows." Following the recitation of "I stretch out my elbows" the children count "one, two, three, four, five" as they complete the task of stretching their elbows. In another activity, "I bend forward," the children chant "I bend forward, down, down, down" as they fulfill the directive. In summary, movement helps the child to generate specific vocabulary, and in turn these words direct and enhance the quality of movement. Let us examine the goal of a group of children whose needs are very basic.

GOAL: Elimination of asymmetric tonic neck reflex interference in meaningful activity.

Objectives	Procedures	Relevance
	a. Conductor models b. Children respond	
1. Clasp hands (position: supine)	a. "I clasp my hands together." b. "I clasp my hands together one, two three, four, five."	Symmetry of head and upper extremities.

Objectives	Procedures	Relevance
2. Stretch elbows (position: supine, and hands clasped)	a. "I stretch out my elbows.: b. "I stretch out my elbows out, out, out."	Voluntary control of particular movement; maintenance of position against gravity.
3. Look at thumbs. (position: supine, and hands clasped)	a. "I look at my thumbs." b. "I look at my thumbs one, two, three, four, five."	Maintenance of head in the midline; eyes fixate on a specified target.

Self-care, particularly feeding, is essential to the cerebral palsy child's independence and maturation. Basically the same sequence of movements necessary for feeding are necessary for writing. Again by associating language concepts with active movement, perceptual-motor integration for these functions is increased. Utilizing principles identified with the development body-image, each element in the sequence is analyzed in terms of relationships: 1. self to objects, 2. parts of self to objects, 3. objects to self, 4. objects to one another and 5. abstract relationships between symbols on paper.

GOAL: to use a pencil for writing

Objectives	Prerequisite/Position	Chant	Relevance
1. Proper sitting: feet on floor, hips flexed and body weight forward, hands relaxed on table.	Lying supine on plinth with legs hanging over the end.	"My feet are hanging down, down, down, down."	Body differentiation--fixing one part of the body while activating another.
	Sitting on a box, hands clasped and elbows extended, the child touches the floor between the knees while reciting the intention.	"I touch the floor, down, down, down."	Sitting balance, hip flexion and knee abduction.
2. Differentiation of head from rest of body.	Sitting on a box freely.	"I look at the window I look at the door I look at the ceiling I look at the floor."	Independent head movement
3. Differentiation of the eyes from the head.	Sitting on a box freely, head remains still.	Same as above.	Independent eye movements
4. Differentiation of the two arms.	Lying supine on plinth; sitting on a box freely.	"I raise my left arm in the air, up, up, up." "I push my right hand down flat, down, down, down."	Separation of arm functions and controlled asymmetric activity.
5. Differentiation of the fingers.	Sitting at table freely.	"I push my thumbs together, push, push, push." "I push my thumb up, up, up, up."	Isolation of each digit in order to manage tool.
6. Perception of how the body parts operate independently and together.	Lying supine, prone and sitting freely.	"I touch my chin with my left hand, up, up, up." "I lift my foot in the air, up, up, up." "I roll my body to the left, over, over, over."	Knowledge of where the body parts are, how much space they occupy, what they can do; application of position and direction up/down, left/right, front/back, out/in without fear of falling or being hurt.

As you observe, these objectives are developmentally sequential, and always include space-time concepts associated with appropriate movements. All objectives are generalized to social and academic opportunities as soon as possible and introduced throughout the day. Establishing new motor patterns requires continous practice as well as encouragement and reinforcement from people who are important to the children. Such an example is the morning "Best Walking Time" when the children who are ambulatory parade before the other students and staff. There is a very special excitement because everyone is watching and will know how much competency to expect later in the day.

Conductive Education is relatively unfamiliar to the United States. Only one federally funded program, Wisconsin State Colony, Madison, Wisconsin has researched Conductive Education, and while the program was well conceived and executed, there were many unanticipated interruptions. In modified form--individual vs. group--I have introduced the use of Conductive Education into a Home Training Program for cerebral palsy rural children who are unable to be placed into a group. To evaluate improvement in the areas of speech, language comprehension and movement each child was used as his/her own control The parent(s) under regular consultation was made the conductor. Conductive Education Program is the attitude of the parents--everyone became more positive and confident in their interactions with their children. The parents became skilled observers of their children's behaviors and progress, and consequently they came to appreciate the importance of small changes not normally observed nor appreciated.

To conduct a controlled experiment in cerebral palsy is very difficult because each child's condition is unique in spite of the label, cerebral palsy. Nevertheless, where there is a concentration of such a population it would be valuable to employ Conductive Education, particularly for those children who have a history of intensive therapy and are still functioning at a dependent level. Finally I would strongly recommend the strategy of teaching parents to act as conductors in the home; they become more sensitive to their children's needs and more adept at solving many common problems relevant to living with a handicapped individual.

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